California Regional Water Quality Control Board
San Diego Region

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SUBJECT: DIRECTIVE FOR GROUNDWATER INVESTIGATION REPORT PURSUANT TO CALIFORNIA WATER CODE SECTION 13267
Belt Street Pipeline Rupture
San Diego, California

The California Regional Water Quality Control Board (RWQCB) is the State regulatory agency with the responsibility for protecting the quality of ground waters and surface water within its area of jurisdiction. The RWQCB has been given authority under the California Water Code (CWC) to require submission of information, direct action, establish regulations, levy penalties and/or bring legal action when necessary to protect water quality.

For reasons explained below and pursuant to California Water Code (CWC) section 13267, please provide me no later than **January 25, 2002, a preliminary site conceptual model and a**

workplan to conduct a soil and groundwater investigation. The investigation should adequately delineate the lateral and vertical extent of soil and groundwater contamination and determine possible impacts to the water quality of San Diego Bay and possible impacts to human health and the environment. Failure to submit an adequate preliminary site conceptual mode and workplan by January 25, 2002, may result in the RWQCB issuing an administrative civil liability to the City of San Diego, AMEC Earth and Environmental, and Tri-County Drilling, Inc. in an amount not to exceed $1,000 for each day of the violation (CWC section 13268).

Background

On February 1, 2001, an underground fuel pipeline was ruptured during a geotechnical investigation being conducted along Belt Street in San Diego, California. The pipeline was ruptured during the drilling of a soil boring by Tri-County Drilling, Inc., as directed by AMEC, a geotechnical consultant contracted by the City of San Diego. The pipeline is a Chevron Products Co. (Chevron)-owned, eight-inch diameter, steel, underground fuel pipeline, containing unleaded gasoline. The pipeline is used to transport fuel between the Upper and Lower Chevron Products Co. Bulk Fuel Terminals. The rupture of the pipeline caused a catastrophic release of approximately 2,730 gallons of unleaded gasoline to the ground and groundwater.

The site is located in the City of San Diego near the southern terminus of Sicard Street. The site is located within the National Steel and Shipbuilding (NASSCO) facility which is leased from the Port of San Diego. The underground product pipeline is located within a portion of Belt Street that is now located within the NASSCO facility.

Parties Responsible for the Discharge

Tri-County Drilling, Inc. is a discharger because the act of drilling into the pipeline caused the release of petroleum products to the environment. This release could affect the quality of waters of San Diego Bay.

AMEC Earth and Environmental directed Tri-County Drilling, Inc. to drill the soil boring in the location of the pipeline release, thereby permitting the release to occur.

The *City of San Diego* contracted with AMEC Earth and Environmental to conduct a geotechnical investigation of a proposed sewer line that required the drilling of soil borings in the roadway where the pipeline is located, thereby permitting the release to occur.

Nature of the Discharge

Soil samples were collected as part of the emergency response activities conducted by the Chevron Petroleum Products , Inc. and analyzed for total petroleum hydrocarbons as gasoline (TPHg) and as diesel (TPHd), benzene, toluene, ethylbenzene, xylenes, methyl tertiary butyl ether (MTBE), diisoproply ether (DIPE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), and tertiary butyl alcohol (TBA). Samples were collected from depths ranging

between 5 to 11 feet below grade. The soil samples had the following maximum concentrations of petroleum compounds.

Compound	Maximum Concentration
TPHg	95,000 milligrams per kilogram (mg/kg)
Benzene	250 mg/kg
Toluene	1,900 mg/kg
Ethylbenzene	470 mg/kg
Xylenes	2,200 mg/kg
MTBE	2,400 mg/kg
TBA	250 mg/kg

Between February and March, 2001, Chevron Petroleum Products , Inc. conducted an interim remedial action at the site. This activity reduced the apparent free product thickness from approximately 36 to 1.5 inches.

Potential Threat to the Water Quality of San Diego Bay

The site is located in the Chollas Hydrologic Subarea (908.22) of the San Diego Mesa Hydrologic Area (908.20) of the Pueblo San Diego Hydrologic Unit (908.00). The Basin Plan indicates that beneficial uses of groundwater in this Hydrologic Area do not apply westerly of the easterly boundary of the right-of-way of Interstate 5 and that this area is exempted from the sources of drinking water policy. The site is located in this area, therefore, groundwater at the site is exempted from the sources of drinking water policy.

Groundwater at the site is at a depth of approximately 10 to 12 feet below grade and flows towards San Diego Bay, located approximately 600 feet to the southwest. Groundwater is likely to flow into San Diego Bay. In addition, underground structures, such as pipelines, and storm drains, may act as preferential pathways for groundwater at the site to flow into San Diego Bay. Free product and soil with TPHg, benzene, and MTBE concentrations of up to 95,000 mg/kg, 250 mg/kg, 2,400 mg/kg, respectively are in contact with groundwater. These compounds will continue to dissolve into groundwater and may migrate to, and threaten the water quality of San Diego Bay.

There are existing and potential beneficial uses of San Diego Bay. Those uses which may be affected if contaminated groundwater at the site flows into San Diego Bay include:

- Contact Water Recreation
- Commercial and Sport Fishing
- Marine Habitat
- Wildlife Habitat
- Rare, Threatened, or Endangered Species
- Shellfish Harvesting

The site is located within 1,000 feet of San Diego Bay. In its April 1, 1996 Memorandum (and July 23, 1996 amendment) titled "Regional Board Supplemental Instructions to State Water Board December 8, 1995 Interim Guidance on Required Cleanup at Low-Risk Fuel Contaminates Sites," the RWQCB established cleanup goals for groundwater within 1,000 feet of a marine surface water body that are protective of beneficial uses of marine water. These cleanup goals are:

Compound	Cleanup Goal
Benzene	400 micrograms per liter (ug/l)
Toluene	5,000 ug/l
Ethylbenzene	430 ug/l
Xylenes	10,000 ug/l
Naphthalene	2,350 ug/l
PNAs	300 ug/l

Because of the high petroleum hydrocarbon concentrations in soil and the presence of free product on the water table, some or all of these groundwater cleanup levels likely are exceeded at the site.

Required Documents

Preliminary Site Conceptual Model: A Site Conceptual Model (SCM) is a document that describes the release scenario, the geologic and hydrogeologic nature of the site, the distribution of contaminates in soil, groundwater, and soil vapor, and identifies pathways and potential receptors. The SCM is an evolving document that is updated as investigation activities are conducted. The importance of the SCM is that it establishes the basis for determining the risks to potential receptors and the framework for the investigation and remedial effort to be conducted at the site.

The first step in the development of the SCM is the preparation of a Preliminary Site Conceptual Model. At a minimum, an acceptable Preliminary Site Conceptual Model shall include the following:

- A description of the release, and identification of the primary source;
- Abatement measures and interim corrective actions taken to date;
- Description of the site geology and hydrogeology;
- A conduit study to identify all underground utilities, construction, and natural features that may act as preferential pathways for the migration of contaminates;
- Identification of all potential receptors;

- Evaluation of all complete and incomplete pathways;
- Current and reasonably foreseeable future risk to public health; and
- Current and reasonably foreseeable future risk to ecological receptors, creeks, and surface water.

To be deemed acceptable the Preliminary Site Conceptual Model must meet all the requirements of this enforcement letter, and be signed and stamped by a California registered geologist or civil engineer experienced in conducting similar investigations in the State of California. All work must be done under the direct supervision of the registered professional who signs the report. By signing and stamping the report the registered professional takes full responsibility for the content of said report. In addition, the Preliminary Site Conceptual Model shall contain a statement by this person, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

Workplan for Soil and Groundwater Investigation: An acceptable workplan to complete a comprehensive soil and groundwater investigation includes but is not limited to the information listed in the most current edition of the San Diego County Department of Environmental Health Site Assessment and Mitigation Manual. In addition the following items are to be included in the workplan.

- A map showing the location of all underground utilities in the vicinity of the site.
- Crossections showing the dimension, invert elevation, and construction details of the underground utilities described above.
- A map showing the location of all storm drains in the vicinity of the site that discharge into San Diego Bay. The map must show the location where the storm drains discharge into San Diego Bay.
- Crossections showing the dimensions, invert elevations, and construction details of the storm drains described above.
- A detailed history of the pipeline. This history should include the date that the pipeline was installed, repair history of the pipeline, construction details of the pipeline, and a listing of all fuels, chemical, and other products that may have historically been transported through the ruptured pipeline.

To be deemed acceptable the Workplan must meet all the requirements of this enforcement letter, and be signed and stamped by a California registered geologist or civil engineer experienced in conducting similar investigations in the State of California. All work must be done under the direct supervision of the registered professional who signs the report. By signing and stamping the report the registered professional takes full responsibility for the content of said report. In

addition, the Workplan shall contain a statement by this person, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

Should you have any questions, please contact Mr. Barry S. Pulver, R.G., C.E.G., C.H.G. at (858) 467-2733.

Respectfully,

John H. Robertus
Executive Officer
San Diego Regional Water Quality Control Board

JHR:bsp:jac

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